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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,516	02/20/2004	Christi Kay Madsen	Madsen 29-1	7592

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Mr. Bruce S. Schneider  
1153 Long Hill Road  
Stirling, NJ 07980-1007

EXAMINER
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KIM, DAVID S

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/783,516

Applicant(s)

MADSEN ET AL.

Examiner

David S. Kim

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

**Claim Rejections - 35 USC § 112**

1. **Claims 1-8** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, consider the limitation of "Type I" and "Type II" sequences. Although Applicants may be their own lexicographers, Applicants do not define in the specification each Type I or II to such a degree that the claims are clear and how the elements are connected. The claims are incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. It is unclear from the claim how there are essential cooperative relationships at all. That is, since the structural elements are not claimed, it is unclear how they are connected. Such lack of clarity renders the claims indefinite.

For example, consider the case that a Type I sequence is comprised of a phase shifter, a coupler, and a phase shifter. Two of these in a row would logically comprise a phase shifter, a coupler, a phase shifter, a phase shifter, a coupler, and a phase shifter. Yet, in Figure 4, two Type I sequences are supposed to comprise a phase shifter, a coupler, a phase shifter, a coupler, and a phase shifter (the center phase shifter is shared). Similar lack of clarity is shown in Fig. 5 regarding two Type II sequences.

As a remedy, Examiner respectfully suggests that Applicant clearly define the structural elements of these Type I and II sequences and their essential cooperative relationships in the claim language.

**Claim Rejections - 35 USC § 103**

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

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Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. **Claims 1-8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heismann ("Analysis of a reset-free polarization controller for fast automatic polarization stabilization in fiber-optic transmission systems").

**Regarding claim 1**, Heismann discloses:

A process for operating on an incoming optical signal having a first state of polarization to produce an outgoing optical signal having a second state of polarization different from said first state (abstract, any varying general input state to any general output state) and further processing said outgoing signal (p. 690, col. 1, middle paragraph, examples of receivers, switch arrays, demultiplexers), said process comprising the steps of

introducing said incoming signal to a sequence, said sequence being a Type I sequence (e.g., if Type I sequence is a phase shifter, a coupler, and a phase shifter, then Heismann's Fig. 2 shows a phase shifter (first QWP shifts phase, p. 691, col. 1, middle paragraph), a coupler (HWP couples multiple devices), and a phase shifter (second QWP shifts phase, p. 691, col. 1, middle paragraph)), Type II sequence (e.g., if Type II sequence is a coupler, a phase shifter, and a coupler, then Heismann's Fig. 2 shows a coupler (first QWP couples multiple devices), a coupler (HWP shifts phase, p. 691, col. 1, middle paragraph), and a phase shifter (second QWP couples multiple devices)), or a combination of Type I and Type II sequences;

controlling said sequences to operate without reset (abstract, reset-free); and

further processing said outgoing signal (p. 690, col. 1, middle paragraph, examples of receivers, switch arrays, demultiplexers).

Heismann does not expressly disclose:

introducing said incoming signal to *a series of sequences*.

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However, employing such a series of sequences would be an obvious technique in a fiber-optic communication system. That is, Heismann's process is applicable wherever polarization stabilization would be useful (p. 690, col. 1, middle paragraph). As polarization can fluctuate at various points along a fiber-optic communication system, one would thus be motivated to apply Heismann's process at such various points. Such applying of Heismann's process would constitute employing a series of sequences.

**Regarding claim 2**, Heismann does not expressly disclose:

The process of claim 1 wherein components of said sequences are formed of silicon based materials.

However, silicon based materials are extremely well known in the art for optical components. They are relatively cheap, and manufacturing techniques with silicon based materials are highly mature.

**Regarding claims 3-8**, claims 3-8 disclose various combinations of sequences. Heismann does not expressly disclose these particular sequences. However, in view of the obviousness argument provided in the treatment of claim 1 above, these various combinations of sequences would only provide obvious variations of employing the process of Heismann.

#### **Double Patenting**

5. **Claims 1-8** of this application conflict with claims 1-8 of Application No. 10/930,248. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

6. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

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7. **Claims 1 and 3-8** are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1 and 3-8 of copending Application No. 10/930,248. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented. Notice claims 1 and 3-8 of the instant application and claims 1 and 3-8 of copending application 10/930,248 are identical.

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. **Claim 2** is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 2 of copending Application No. 10/930,248. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed subject matter in one application is an obvious variation of the claimed subject matter in the other application. Notice that both applications claim:

components of the Type I and Type II sequences that are formed of silicon based materials (compare claim 2 of the instant application and claim 2 of copending application 10/930,248).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nolting et al., Heismann '431, Heismann '743, Shieh, and Trzeciecki et al. are cited for showing reset free devices. Wooten is cited to show a method and apparatus for transforming polarization of light with coupler structures (e.g., Figs. 5A-5C).


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David S. Kim whose telephone number is 571-272-3033. The examiner can normally be reached on Mon.-Fri. 9 AM to 5 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth N. Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DSK

  
**KENNETH VANDERPUYE**  
**SUPERVISORY PATENT EXAMINER**